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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/444,723	11/24/1999	JEFFREY WOODING	100-42	9016

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EXAMINER
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TAYLOR, BARRY W

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 06/22/2004

22

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/444,723

Applicant(s)

WOODING, JEFFREY

Examiner

Barry W Taylor

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-28 is/are allowed.
- 6) ☒ Claim(s) 1-18 and 29-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-18 and 29-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emerson et al (5,553,059 hereinafter Emerson) in view of Borchering et al (5,802,143 hereinafter Borchering).

Regarding claims 1 and 44. Emerson teaches an apparatus for remotely measuring characteristics of a communication line (entire disclosure) comprising:

receiving means (#32, #42, #12 fig. 1) for connecting to a remote end of the communications line;

sender means (#22 figure 1) for connecting to the other end of the communications line;

the receiver means (#32, #42, #12 fig. 1) generating a signal in response to a selection of one of a plurality of characteristics of the line to be measured (Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

the sender means having detection means (#34 figure 1) for detecting the signal, and switching means (see switching circuit for loop back and pattern generator

for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

such that on detection of the signal, and on the basis of the unique representation of the signal, the switching means is controlled to connect predetermined circuitry across the line at the other end and at the remote end to enable a selected characteristic of the line to be measured (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

According to Applicants amendment and remarks on pages 14-17 (see paper number 15, Amendment "C") wherein Applicant's contend that Emerson does not disclose connecting predetermined circuitry across the communications line at the remote end based on the selected characteristic (see Applicant's amended independent claims and general arguments starting on page 14 and continuing to page 17 of paper number 15, amendment "C", dated 3/31/03).

Borchering teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C) used to sequentially connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Regarding claims 2, 30. Emerson teaches the signal is generated by signal generation means and is assigned a unique code such that the unique code is representative of a characteristic of the line to be measured (col. 1 lines 64-67, col. 2 lines 6-46, col. 3 lines 36-38, col. 3 line 66 – col. 4 line 67, col. 5 lines 1-66, col. 6 lines 27-67, col. 7 lines 1-65).

Regarding claim 3. Emerson teaches the apparatus wherein the signal assigned a unique code is represented by a sequence of pulses (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12).

Regarding claim 4. Emerson teaches the apparatus wherein on detection by the detection means of the signal, the signal is converted into a digital code (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12).

Regarding claim 5. Emerson teaches the apparatus further comprising processor means for receiving and processing the digital code representation of the signal (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12).

Regarding claim 6. Emerson teaches the apparatus wherein the switching means is controlled by the processor means to connect the predetermined circuitry on

the basis of the particular code received and processed by the processor means (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

Regarding claims 7-8, 17-18 and 43. Emerson does not explicitly show using buttons. However, Emerson shows using the well-known command sequence to trigger a pattern generator (column 5). Emerson even provides the option of which pattern is to be generated.

Borchering teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C) used to sequentially connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Regarding claim 9. Emerson does not explicitly show a low frequency signal.

Borchering teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C) used to sequentially connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Method claims 10-16 are rejected for the same reasons as apparatus claims 1-6 since the recited elements would perform the claimed steps.

Regarding claim 29. Emerson teaches an apparatus for remotely measuring characteristics of a communication line (entire disclosure) comprising:

receiving means (#32, #42, #12 fig. 1) for connecting to a remote end of the communications line;

sender means (#22 figure 1) for connecting to the other end of the communications line;

the receiver means (#32, #42, #12 fig. 1) generating a signal in response to a selection of one of a plurality of characteristics of the line to be measured (Title,

abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

the sender means having detection means (#34 figure 1) for detecting the signal, and switching means (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

such that on detection of the signal, and on the basis of the unique representation of the signal, the switching means is controlled to connect at least one of the measurement-related circuits across the line at the other end and at the remote end to enable a selected characteristic of the line to be measured (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

According to Applicants amendment and remarks on pages 14-17 (see paper number 15, Amendment "C") wherein Applicant's contend that Emerson does not disclose connecting predetermined circuitry across the communications line at the remote end based on the selected characteristic (see Applicant's amended independent claims and general arguments starting on page 14 and continuing to page 17 of paper number 15, amendment "C", dated 3/31/03).

Borcherling teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System



figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C) used to **sequentially** connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Regarding claim 31. Emerson does not explicitly show relays.

Borchering teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C) used to **sequentially** connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Regarding claims 32-33. Emerson discloses the capability to determine transmission problems on the telephone line but does not explicitly describe line loss.

Regarding claims 34-35. Emerson discloses the capability to determine transmission problems on the telephone line but does not explicitly use the term "line pair" when determining line loss.

Borchering teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C) used to sequentially connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Regarding claim 38. Emerson does not explicitly show a single line pair and the measurement-related circuits are connected between the two lines of the single line pair.

Borchering teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C)

Art Unit: 2643

used to sequentially connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Regarding claim 39. Emerson discloses the capability to determine transmission problems on the telephone line but does not explicitly describe using numeric value.

Borchering teaches a telephone technician's remote assist apparatus connects into telephone lines to be tested by the technician (see Service Restoration System figure 2). Borchering discloses using switching fabric (see 328 figures 3A, 3B and 3C) used to sequentially connected predetermined circuitry so that damaged cable pairs maybe identified and restored (abstract, col. 5 lines 15-33).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to include switching fabric as taught by Borchering so that sequential messages may be used to switch predetermined circuitry across communication lines to selectively ground telephone lines enabling for damaged lines to be identified and restored.

Regarding claims 40-41. Emerson teaches loop back testing which inherently and/or obviously requires impedance matching.

Butler teaches using isolating circuitry for isolating the subscriber side and central office side (column 4 lines 22-33).

Regarding claim 42. Emerson shows using a oscillator (see bit patterns oscillating between different one's and zero's columns 4-6).

***Allowable Subject Matter***

2. Claims 19-28 are allowed.

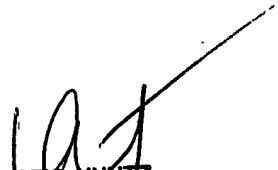
***Response to Amendment***

3. The declaration filed on 4/12/2004 under 37 CFR 1.131 is sufficient to overcome the Butler et al (6,201,853) reference.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W Taylor whose telephone number is (703) 305-4811. The examiner can normally be reached on Monday-Friday from 6:30am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703) 305-4708. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 customer service Office whose telephone number is (703) 306-0377.

  
CURTIS KUNTZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600